



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/B/PTO				Complete If Known	
				Application Number	10/661,831
				Filing Date	September 12, 2003
				First Named Inventor	Qing Hu
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	1	of	2	Attorney Docket Number	101328-0178

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
TM	AA	US-6,144,679	11-07-2000	Herman, et al.	
TM	AB	US-6,563,622-B2	05-13-2003	Mueller, et al.	
TM	AC	US-5,936,989	08-10-1999	Capasso, et al.	
TM	AD	US-5,745,516	04-28-1998	Capasso, et al.	
TM	AE	US-5,509,025	04-16-1996	Capasso, et al.	
TM	AF	US-5,457,709	10-10-1995	Capasso, et al.	
TM	AG	US-6,188,477-B1	02-13-2001	Pu, et al.	
TM	AH	US-6,154,475	11-28-2000	Soref, et al.	
TM	AI	US-6,370,219-B1	04-09-2002	Peale	
TM	AJ	US-6,472,683-B1	10-29-2002	Li	

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
					T ⁶

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			
TM	CA	Kazarinov and Suris, "Possibility of the amplification of electromagnetic waves in a semiconductor and superlattice," Sov. Phys. Semicond. 5, 707 (1971)			
TM	CB	Faist, et al., "Quantum cascade laser," Science 264, 477 (1994)			
TM	CC	Beck, et al., "Continuous Wave Operations of a Mid-infrared Semiconductor Laser at Room Temperature," Science 295, 301 (2002)			
TM	CD	Helm, et al., "Intersubband Emission from Semiconductor Superlattices Excited by Sequential Resonant Tunneling," Phys. Rev. Lett. 63, 74 (1989)			
TM	CE	Kohler, et al., "Terahertz semiconductor-heterostructure laser," Nature, 417, 156 (2002)			
TM	CF	Tredicucci et al. "High performance interminiband quantum cascade lasers with graded superlattice," Appl. Phys. Letter. 73, 2101 (1998)			
TM	CG	Rochat, et al., "Low-threshold terahertz quantum-cascade lasers," Appl. Phys. Lett. 81, 1381 (2002)			
TM	CH	Williams, et al., "3.4-THz quantum cascade laser based on Longitudinal-optical-phonon scattering for depopulation," Appl. Phys. Lett. 82, 1015 (2003). Also published in Virtual Journal of Nanoscale Science & Technology, 7(8) (2003)			
TM	CI	Unterrainer, et al., "Quantum cascade lasers with double metal-semiconductor waveguide resonators," Appl. Phys. Lett. 80, 3060 (2002)			

Examiner Signature	<i>J. Hu</i>	Date Considered	7/8/05
--------------------	--------------	-----------------	--------



PTO/SB/08a/b (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/B/PTO				Complete If Known	
				Application Number	10/661,831
				Filing Date	September 12, 2003
				First Named Inventor	Qing Hu
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	2	of	2	Attorney Docket Number	101328-0178

TM	CJ	Lee, et al., "Au-In bonding below the eutectic temperature," IEEE Trans. Comp. Hybrids. Manuf. Technol. 16, 311 (1993)	/
2	CK	Wang, et al., "Die bonding with Au/In isothermal solidification technique," J. Electron. Mat. 29, 443 (2000)	
TM	CL	Wang, et al., "Stable and shallow PdIn ohmic contacts to n-GaAs," Appl. Phys. Lett. 56, 2129 (1990)	
TM	CM	Troccoli, et al., "Mid-infrared (n = 7.4 um) quantum cascade laser amplifier for high power single-mode emission and improved beam quality," Appl. Phys. Lett. 80, 4103 (2002)	
TM	CN	Mueller, et al., "2.5 THz Laser Local Oscillator for the EOS Chem 1 Satellite," Proceedings of the Ninth International Space Terahertz Technology Symposium, pp. 563-572, Pasadena, CA, March 17-19 (1998)	
TM	CO	Williams, et al., "Narrow-linewidth terahertz intersubband emission from three-level systems," American Institute of Physics (1999)	
TM	CP	Williams and Hu, "Optimized energy separation for phonon scattering in three-level terahertz intersubband lasers," American Institute of Physics (2001)	
TM	CQ	Xu and Hu, "Electrically pumped tunable terahertz emitter based on intersubband transition," American Institute of Physics (1997)	
CR	CR	Faist, et al., "Bound-to-Continuum and Two-Phonon Resonance Quantum-Cascade Lasers for High Duty Cycle, High-Temperature Operation," IEEE (2002)	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature	<i>[Signature]</i>	Date Considered	7/8/05
--------------------	--------------------	-----------------	--------